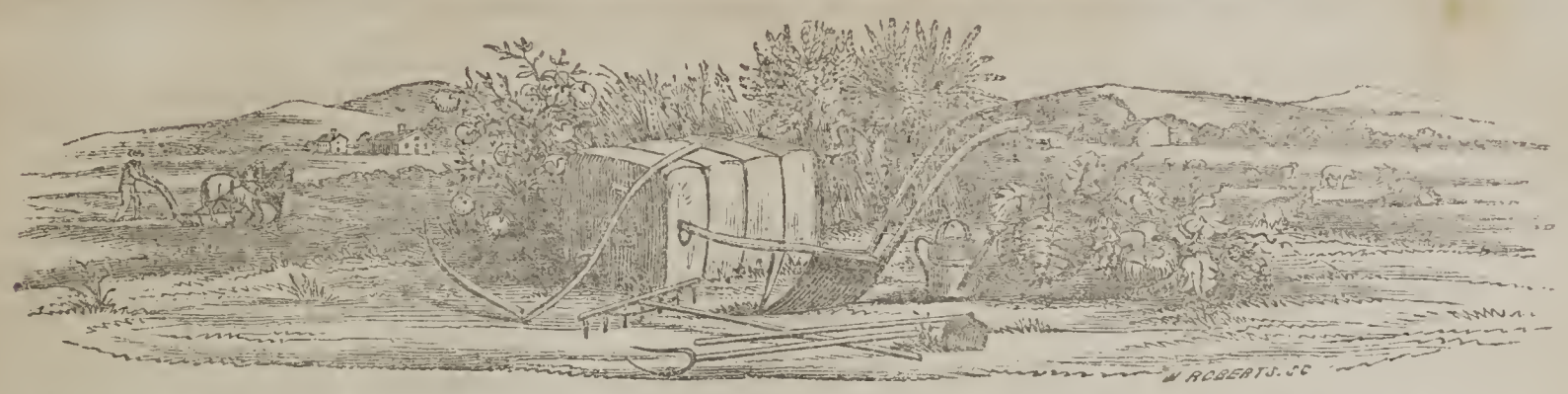

FARMER AND PLANTER.

DEVOTED TO AGRICULTURE, HORTICULTURE, MECHANICS, DOMESTIC AND RURAL ECONOMY.

VOL. III. PENDLETON, S. C., JULY, 1852. No. 7.

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Pebble Houses; or Lime and Gravel Walls.

This excellent model of building, particularly where lime and gravel abounds, is but little understood. From personal observation we are convinced that a house built in this way is as good as it is cheap. Upon this point we have the testimony of the editor of the Phrenological Journal in the following article, which we extract from that excellent paper.

"First in its *cheapness*. Respecting this, let the following facts decide the question. The senior editor put up the upper story of his house, which is 256 feet in circumference, and 11 feet four inches high, at the following cost:

Common labor, 41 days, at $12 per month	$20 00
Carpenter work	7 00
Masons laying window sills, arches, and leveling wall,	2 50
Lime, 250 bushels, slaked, at 4 cents per bushel	10 00
Lumber for standards and top of wall,	6 00
1,000 brick for window sills and arches	6 50
Board of hands	12 00
Sand, nails, horse to haul up, use of boards for troughs, &c	15 00
Total	$79 00

"This estimate does not include my own labor, which consisted in superintending and rendering such assistance as the occasion required. The carpenter work included the erecting and bracing the standard and guides, to which to nail the boards, in which the mortar was put, and the putting up of those boards, as well as the setting of the window frames, erecting scaffolds, &c. The mortar was hoisted by a horse and tackle. Now if that wall had been put up in the ordinary way, with bricks and water, it would have cost scarcely less than a thousand dollars, especially since it was *fifty feet from the ground*. At all events, the point can be ascertained by applying to mechanics. The price will of course vary, but compare their estimates with those above given. I was particularly surprised that it took *so little lime*, and yet in the story below, $12 worth of lime put up the wall of the same length, and 12 feet high, beside building half of a large cistern, with a wall eighteen inches thick, and in addition casting several pillars, and making up a bed of mortar. Doubtless more lime and sand would have made the wall better, but it stands, and answers every purpose as it is. This estimate includes simply the wall itself, not the window frames, yet does include setting them; but it includes two large door frames, and the bricks required for the door and window-sills and arches.

"The amount of wall thus put up would build a house 45 feet long, 25 feet wide, and *two stories and a half high*, the stories nine, eight and four feet. This would be called a house of good size.—Now let the reader ask any mason and carpenter for what they will put up the walls of a house 25 by 45, and two stories and a half high, those stories to be nine, eight and four feet respectively, excepting simply the making of the window-frames, and have the whole ready for laying the floor timbers, and compare that estimate with the cost as given above, namely, $79, and he will be able to compare this mode of structure with either brick, wood, or stone. In the above estimate, we have not made much allowance for getting the mortar bed ready, and for the rigging necessary in the start, because these had been previously prepared with which to build the lower stories. But our estimate includes all the time and materials spent from the time of actually beginning the story in question, and leaving it ready for receiving the timbers of the roof. The cost of the preceeding stories was about the same—perhaps from five to ten dollars greater, the wall being thicker and the work carried on to not quite so good an advantage. Our estimate does not include the plastering of the outside, which, however, is not a very expensive process, provided the walls are put up as they should be. This would require from $25 to $50, according to the style and the rapidity of the workmen employed, which would be a trifle more than putting the ordinary plaster on, after the lathing is done—for, as in this case, the plaster is put directly upon the wall, to which it adheres with a tenacity and firmness far greater than it would do upon lath or brick."

Seed Planter.

We were shown on last Monday, by the inventor, Mr. Carter, a new machine for planting seed, especially cotton seed, which exceeds anything of the kind we have ever seen or heard of. It drops from 5 to 10 seed in a hill, at such distances as is desired, and is so constructed as to open the hill, drop the seed and

cover them at the same time, thus saving seed and labor of one horse and seven hands; as it usually takes two hands to drop after one plow, and one to cover.—In other words, one horse and one man, with this machine, performs the labor of eight hands and two horses in planting crops. From what the ingenious inventor told us of its operation, having planted his entire crop with it this year, it is destined to come into general use.—It can also be made to drop corn and peas at the same time with much more accuracy than it can be done by hand.

The inventor intends applying for a patent, and therefore a minute description of it might be improper. Mr. Carter is a native of Laurens district, and we wish him every success, and that his ingenuity may be rewarded, not only with fame, but with something more "*material.*"—*Laurensville Herald.*

The Peel or Rind of Fruit Indigestible.—This fact cannot be too strongly impressed upon the public. It applies to all fruit without exception, and includes also the pellicle or skin of kernels and nuts of all kinds. The edible part of fruit is particelarly delicate, and liable to rapid decomposition if exposed to the atmosphere; it is, therefore, a provision of nature to place a strong and impervious coating over it, as a pretection against accident, and to prevent insect enemies from destroying the seed within. The skin of all the plum tribe is wonderfully strong compared with its substance, and resists the action of water and many solvents in a remarkable manner. If not thoroughly masticated before taken into the stomach, the rind of plums is rarely, if ever, dissolved by the gastric juice.—in some cases, pieces of it adhere to the coats of the stomach, the same as wet paper clings to bodies, causing sickness and other inconvenience. Dried raisins and currants are particularly included in these remarks, shewing the best reasons for placing the fruit upon the chopping board with the suet in making a pudding of them, for if a dried currant passes into the stomach whole, it is never digested at all. When horses eat oats or beans that have not been through a crushing mill, much of this food is swallowed whole, and in this state, being perfectly indigestible, the husk or pellicle resisting the solvents of the stomach, there is so much lost to nutrition. Birds, being destitute of teeth, are provided with the apparatus for grinding their seed, namely, the gizzard through which the seed passes, and is crushed prior to digestion. The peels of apples and pears should always be cast away. Oranges we need not mention, as this is always done.—Orleans, greengages, damsons, and all plums, should be carefully skinned, if eaten raw; and if put into tarts, they should be crushed before cooking. Nuts are as indigestible as we could desire, if the brown skin be not removed or blanched, as almonds are generally treated.—*Ex.*

Inductive Philosophy, vs. Productive Farming.

Messrs. Editors:—Nothing has had a greater tendency to retard Agricultural improvement than the gross humbuggery which now and then finds a place in the columns of an agricultural Journals, and too often receives an endorsement from those who should protect our ignorance from imposition. One could clip from the columns of almost any of the Agricultural Journals, humbugs that have been paraded before the public during the last ten years—enough to make a good sized octavo. It has been only a few years since it was gravely maintained, by scientific men too, that the whole practice of agriculture was founded upon error, and that a steep for seeds might be prepared at little expense, by means of which the farmer could grow more from a pure sand, than one could by the ancient mode from the richest alluvial.—It found advocates among sound practical farmers—even in Scotland, and was published in the Patent Office Reports, and circulated by act of Congress, as well as agricultural papers of the country. We have seen it asserted on positive authority that a row of corn soaked in saltpetre planted side by side with a row not soaked, and cultivated in precisely the same manner would yield double the quantity. It was only last spring that the agricultural community was startled by the wonderful discovery that cotton seed rolled in plaster of Paris would double the yield upon the same soil.—Every day almost we are astounded by the announcement of some new variety of seed which is to overstock the world with the raw material, or some new process by which every thing can be done more cheaply and efficiently.

Every crazy theorist who runs mad upon one idea, is allowed to publish his lucubrations in the newspapers, too often without a word of comment from those who should know better, and is it to be wondered at, that we poor, ignorant farmers who have been brought up under the belief that whatever was printed was gospel, should be led astray by theories as ingenious and plausible as art could make them. We have been led into this train of thought by a perusal of certain "new inductions in agriculture" which have been going the rounds of the newspapers for some time and appeared in the last number of the Farmer and Planter. This new theory, if theory it can be called, is an unmitigated humbug.

Induction 1st. "It is not true that any plant which the farmer is interested in cultivating, derives its principal nutriment from the carbonic acid gas of the atmosphere." We demand the proof.—Boussingault made an experiment of a five years course—potatoes, beets, clover, wheat, oats, and became satisfied that plants during their growth must have derived two thirds of *their carbon from the air.* When inductive principles give us the result of experiments conducted with equal care we will consider induction No. 1, more worthy of consideration.—Induction 2d. "The only food of plants known to the practical farmer is manure, or the residue of putrefaction. Neither water, oil, carbon, phlogiston, sulphates, phosphates of ammonia, nitrates, muriates, carbonates, silicates, phosphates of soda and potash, nor the carbonates, sulphates, phosphates of ammonia, lime, magnesia; nor acids, nor alkalies have ever been proved to be aliment of plants, unconnected with the putrefied substances which contain them"—is unadulterated nonsense. Why are all or most of these substances found in most plants, if not designed for their aliment? and of what, pray, does this manure or putrified substances, be it rich or poor, consist but the very salts spoken of? We will stake our reputation upon it that the hydrogen of the manure will be found in proportion to the quantity of salts contained in it. Why is the growth of clover increased by the surface application of sulphate of lime, or grass by the application of charcoal?

Induction No. 3. "It is not true that different vegetable matters during their growth, extract different fertilizing salts of the earth. For lands exhausted by continued cultivation in one kind of grain will not produce a more remunerating crop of any other kind."

Ergo—the whole theory of rotation of crops is humbug. All soils are alike capable of producing like results, and all

crops are alike. A monstrous absurdity. Will any man believe it, that cotton, potatoes, peas, sugar cane and artichokes extract the same fertilizing salts from the earth, and that one will succeed as well as the other upon any soil?

Induction No. 4. "It is not true that lands under cultivation cannot he made to preserve their natural fertility without manure, on the contrary, lands naturally poor, may be made exceedingly fertile without the addition of manure of any kind whatever," is sheer nonsense, and utterly demolished by inductions No. 1 and 2. Induction No. 5 is a bare assertion unsustained by experience.

Induction No. 6. "The residue of the decomposition of vegetable substance, or the ash of plants is not manure. Nor can manure be made of any substanee, without the aid of the putrefactive process." Verily this is reasoning in a circle. It is not true that plants derive their principal nutriment from the atmosphere or from the salts of the earth —the only food of plants is manure, or the residue of putrefaction—and the residue of the decomposition of the vegetable substanee is not manure. What next?

Induction No. 7. There is a certain class of philosophers who ever have, and ever will denounce every thing which does not come within the range of their extremely practical vision false. They insist upon their being no wiseacres save those who carry the pumpkin in one end of the bag and the rock in the other.

Induction No. 8. "That shade is the great fertilizing agent; the putrefactive fermentation cannot be produced without it, and consequently no manures can be made and no fertility imparted to the earth in any manner independent of its influence."

This philosopher loves the shade too well. We have always been under the delusion that light and heat had something to do with this putrefactive fermentation which seems to be the pet of this advocate of shade. And we are almost certain that we have made too ears of corn grow where one would not have grown before, by the application of manure without the shadow of a shade.

Induction No. 9. "That the earth itself is capable of being converted into the best manure—to effeet this, it is only necessary that it should be densely shaded."

Glorious news, this, to the owners of chinquepin thickets, green briar and huckleberry ridges!

Induction Nos. 10 and 11. Unadulterated nonsense.

Induction No. 12—cannot be sustained. We are not familiar with any pine which has no leaves, and we have always been told that white and red oak lands were better than spanish oak and sour wood.

Induetion No. 13. Shade again! Angels and ministers of grace protect us! We will begin to think that a simple fellow in our neighborhood was not far wrong when he came te the conclusion that his shadow was his "spirit."

Induction No. 14. "The natural provision for the renovation of wornout lands appears to be this: that some plants like some animals require but little food &c." and yet this inductive philosopher has told us in induction No. 3, that it is not true that different plants during their growth extract different fertilizing salts from the earth.

Induction No. 15, may or may not he true.

Induction No. 16. "Through the agency of shade, every farmer may fertilize every acre of land which he is able to cultivate. In this consists the perfection of Agriculture." By what process this can be done, we should like to know.—We take it that it would not be so easy a matter after all.

Shade is a good thing in its place—so is sunlight—so is manure—so are the salts of the earth. It is all humbug to talk about shade being the sine qua non. As old Jerome used to say, "it takes a heap o' sorts o' folks to make a world, and a heap o' sorts o' manures and workin's to make a body's truck grow—on poor land 'specially." BROOMSEDGE.

Big Branch, May, 1852.

Cotton.

MESSRS. EDITORS:—The quantity of Cotton which eau be produced, and the countries adapted to its culture, form a subjeet of deep consideration to the Planter, to the Merchant, and to the Manufacturer.

So far the supply has been equal to the demand and is now by many supposed to have exceeded it, indeed the fear is almost general in the Southern States, that more cotton is, and will continue to be grown, than can be used by the manufacturer, and that the low prices are occasioned by this state of things. Hence the various propositions made to planters, to diminish the quantity of land put in cotton, and to direct their attention to some other culture.

The anxieties of European capitalists upon this subject, indicate some fallacy in these views. Their machinery for cotton fabrics has steadily increased, until it ean now work up as much of the crop as is considered safe, leaving a surplus of half a million of bales, which is thought necessary to guard against accidents in supply, where the investments in a single interest are so enormous.—And the price of the "raw cotton" in the last eighteen months. seems to show that the quantity manufactured does not exceed the demand for consumption.

The population of the world has increased at a more rapid proportional rate, than the production of cotton, and as cotton is unquestionably the cheapest clothing yet known, the probabilities are in favor of the continuance of the demand.

The mercantile world are beginning to believe that the chief supply must come from the United States,* although we see every day the most positive statements, that cotton can be grown here, there, and everywhere. Egypt, it was said at one time, would supply all the fine cottons required. The East was then held up as the country which was to do away with the dependence upon American cottons. The Sultan's experience with the aid of scientific and practical planters from the Southern States, indicates a total failure. The British Dominions in India, with all the resources and energy of British merchants and manufacturers, have, so far. failed in creating the supply which was to have rendered our fields useless.

Africa, that hot bed of vegetation, which has oft and again been dreamed of as the fruitful source of every thing valuable in agriculture, where nature would make the crop, almost unaided, is now again brought to view as the region from which the fleecy product is to be supplied to the world.

The observation and ingenuity of man have enabled him to create and control the steamer and the locomotive—to rob the lightning of half its terrors—and to annihilate time and space in the invisible intelligence of the telegraphic wire. But his science has not yet enabled him to alter the great currents of the ocean, or the equally great currents of the atmosphere. It has not taught him to alter and amend the hygrometric condition of the air, or to make it deposit its aqueous treasures to suit his purposes—still

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*The crop of U. S. in 1850. was bales 2097.000
English imports from E. Indies 1850 308.000
" receipts from other places " 252.000
[*De Bow, Feb.* 1852

"the wind bloweth where it listeth," and the "rain both the latter and the former" are only regulated by Him who giveth them "in his season, and reserveth unto us, the appointed weeks of the harvest."

The preducts of agriculture are regulated by great general laws, which are beyond the control of man, each particular region is gifted with its own peculiar products, dependent upon these general laws. And experience has proved that each and every particular product is adapted to some peculiar circumstances of climate under which it may be made to yield most advantageously and most abundantly.

The short summers required for the maturity of the "small grains"—the longer summers required by tobacco—the still longer by rice and cotton—the still longer by the sugar cane, determine at once, where the regions must be sought adapted to these several products. Each has its peculiarities, however, which shew that it is not dependent upon temperature alone.

We are told that varieties of the cotton plant are found in almost all hot countries, and that many of these are perennial, requiring to be renewed only occasionally in a series of years. The cupidity, if not the intelligence of the American planter, has induced him to test by experiment, every variety of which the seed could be procured, and the result is, that the perennial varieties are of little value, and that his dependence must be placed on the annnual plant, whose energies seem to be directed to the production of fruit and its precious appendage, with only weed enough to produce support and mature this fruit.

The finer varieties are grown within the influence of the sea atmosphere.—The varieties of soil and improvements in cultivation influence the quantity, but the quality is dependent chiefly, first, upon climate, and next, upon selection of seed.

The fruit begins to mature in the fourth month of growth, but for a productive crop, the summer must run through at least six months and a half—and the rains must be *frequent and not excessive.* A season is unpropitious which is dry for an unusual time, and then very wet—or the reverse. Very cool nights in spring are injurious—retarding the bloom; and early frosts at the end of the season, destroy immature fruit.

These peculiarities give positive limits to the cotton region. In the southern States of the Union, in Virginia and N. Carolina the season is too short to mature a sufficiency of fruit to make the culture profitable. On going South we reach the Gulf counties of Louisiana and Texas, where the amount of moisture renders the culture too uncertain to be depended upon. And as we recede from the ocean, along the whole line of this cotton country, the limit of its cultivation is determined by the elevation above the level of the sea, affecting the temperature and making the summer too short for the maturity of the plant.

These peculiarities are only the effects of general laws, upon which climate every where depends, and as these laws influence the great currents of the atmosphere in their absorption, transportation, and regulation of moisture in their regulated circulation over the surface of the globe, we may be directed with much probability to the regions of the earth where the same circumstances may occur, and where climates may be found favorable or unfavorable to the cultivation of cotton.

Temperature alone is not sufficient, the condition of moisture is quite as important, and the inference seems to be supported by experience, *that countries within the influence of periodical rains and droughts, cannot be depended upon for a supply of cotton,* unless under circumstances of rare occurrence, where the means of irrigation are unfailing, and the dry season long enough for the maturity of the plant.

Any crop to be extensively depended upon, must have something like certainty in the result, to warrant expenditure, and heavy investments in its culture, and the experiments which have been made in the production of cotton in almost every known region where the temperature is sufficiently high, has been up to this time so unsuccessful, that it is not probable that the cotton culture can be extended beyond the natural limits indicated by the peculiarities of climate necessary to a remunerating product. R.

To make Good Butter.—The day before churning, scald the cream in a clean iron kettle, over a clear fire, taking care that it does not boil over. As soon as it begins to boil, or is fully scalded, strain it, when the particles of milk which have a tedency to sour and change the butter are left behind. The vessel into which it was strained should then be immersed in a tub of water, and placed in a cellar, till next morning, when it will be ready for churning. By this method, butter can be made in less than one-fourth the time required by the common method. The butter will also be hard, and possess a peculiar sweetness, which will not change. As by this process the butter comes sooner, and the buttermilk is more readily worked out, a great saving of labor is effected. Good butter may, by following this plan, be made in the hottest weather.

Manures.—No. 3.

Their Uses, History, Modes of Preparation, Comparative Value, Rationale of their Causes of Action, Etc. Etc.

BY PROF. J. J. MAPES

Fertilizers in general.—By manures, we understand, in the general acceptation of the term, such materials to be added to the land as it may most require, and of which it is deficient, to supply the components of growing vegetation.

Thus soils should contain the earths, silica, carbonate of lime, alumina, decomposing organic matter, and certain saline substances. Should any of the requirments of the crop intended to be raised, not exist in the components of the soil, it must be added, either in its simple form, or, when more economical, in some cheap compound containing it, and in such additions consists the whole art of manuring. Johnson divides manures into three classes:

1st. The earthy, which are by far the most permanent portions of a soil, and are usually supplied in the largest proportions.

2nd. The *organic* (vegetable and animal,) which are the least permanent, and are used in much smaller quantities than the earthy.

3rd. The saline, which are the most sparingly applied of all the fertilizers, are the most readily absorbed by plants, and whose period of duration in the soil is much longer than the organic, but less than the earthy.

Substances used as manures have a double action; some of them, it is true, furnish directly to the plants some of the constituents of which they are formed, while others act as fertilizers by placing the particles of soil in such mechanical condition as to enable it to absorb moisture and gases from the atmosphere.

Some manures have both these actions, not only furnishing many of the inorganic matters required, but at the same time so coating or configuring the surfaces of the ultimate particles of the soil, as to enable it to retain both moisture and gases until required by the growing plant.

This last is much the larger class of manures. Even *clay* not only assists sandy soils to retain moisture, but after being rendered pulverulent by the action of winter frosts, or by partial burning, (either of which produces similar results) it will receive and retain ammonia, until again taken from it by the growing plants. Some of the saline manures act also by their power of absorption, and rendering such power to earths. Gypsum enters but slightly into the composition of plants, but its powers as an absorbent render it valuable to the farmer, and with the exception of phosphate of lime, (principal constituent of bones,) none of the saline manures can be considered to be, in general, a direct food for plants. "Of the organic manures, those which the more readily putrefy are the most rapid in their effects, but they are the soonest exhausted. Thus oil and fish, the most rapid of fertilizers, are exhausted by the first crop, while bones, which putrefy more slowly, will last for two or three crops. Farm-yard dung, when applied in different states of freshness, illustrates the same principle."

"M. Hassenfratz manured two pieces of the same kind of soil, the one with a mixture of dung and straw highly putrefied, and the other with the same mixture newly made, and the straw almost fresh. He observed that during the first year the plants which grew on the land manured with the putrefied dung, produced the best crop; but the second year, the land which had been manured with the unputrefied dung produced the best crop; the same result appeared the third year, after which each appeared to be equally exhausted. Another experiment by the same chemist, observes Dr. Thompson, renders this truth still more evident. He allowed wood shavings to remain in a moist place for about ten months, till they began to putrefy, and then spread them upon a piece of land as a manure. The first two years this piece of ground produced nothing more than others which had not been manured at all. The third year it was better; the fifth year it reached its maximum of fertility, after which it declined constantly until the ninth, when it was quite exhausted." (Chemistry, vol. 4, p. 323.)

Farmers should observe closely the action of manures, and above all, discard those fallacious notions so common as to the plants having the power to create substances not found in the soil.—This is impossible; if a soil be short of any of the necessary constituents of a plant, which does not exist in the atmosphere, the plant cannot succeed unless such ingredient be added as manure.—Thus it is easily understood that whatever earthy or saline matters are found to exist in plants must have been either derived from the soil, or from the manures added, as these substances not being of a volatile character, could not have been received from the atmosphere. He also should recollect that there are no parts of animal or vegetable matter, but, in either the form of gas or in solution in water, will act as food for plants.

From this fact arises the loss from long exposure of manure heaps, barn-yard exposures, &c., and the intelligent farmer will never subject himself to such loss.—Let him recollect the particular value of green manures plowed under while verdant, and then ask him what would have been their value if they had been exposed to sun and air while undergoing the process of decay, instead of being so positioned that their resultant gases could be absorbed by superincumbent portions of soil, and retained until required by the growing plant. This example will show how much more benefit will result from a clover ley plowed under than could possibly arise if the same soil had been manured with an equal amount of clover hay, that had been previously rotted in an open barn-yard; or from the superior benefits arising from plowing in long manures, and permitting the soil to retain *all* their results, instead of wasting half or more by exposures while rotting. Farmers should never excuse themselves by saying they must have the manures in a state to act *quickly*; or if they do, like the rule in mechanics, they must expect to lose in *power* what they gain in *speed*. where rapid growth is positively indispensible, it should be produced by stimulating manures which can be cheaply applied as compared with rendering the whole manure product of the farm active by hurried and exposed decomposition.

Cultivators can easily decide what substances would be useful to them as manures. Fist let them ascertain what the manure is composed of, and this they can generally do from books, without applying to a chemist for an analysis; and if any of its constituents are required by plants, and such constituents do not already exist in sufficient quantities in the soil, then its use is important.—Inattention to these facts produce most egregious errors, thus some use gypsum (plaster of Pasis) on land that is already surcharged with it, and therefore condemn it as a manure; while others attribute its failure to being too near the sea, forgetting that some small islands entirely surrounded by the ocean have been benefitted by the use of plaster as a manure. To add gypsum to a soil already containing it in sufficient quantities, is as useless as sand to a sandy, or clay to a clayey soil.

It is a common error to suppose that the same manure which may prove beneficial for a particular crop on one soil, must necessarily be the best manure for the same crop on a different soil; but this is not the fact. One soil may contain all the requisites of a crop, while another may be short of some one particular component, which alone is required to render it perfect for production, and the addition of any other in excess will not render it fertile.

Either practice or chemical analysis must be appealed to before the proper manures can be known, for each crop, or class of crops, on each variety of soil, and the expense attendant upon analysis is small when compared with the waste of inappropriate manures.

There can be no doubt that plants derive all their constituents from the soil, or from the air, and even that a large proportion, if not all the carbonaceous matter of which plants are composed, is derived from the carbonic acid of the atmosphere, for it is now settled beyond dispute that plants receive carbonic acid when exposed to light, retain the carbon, (charcoal,) it contains and throws off the oxygen, the carbonic acid being composed of carbon and oxygen. (See our introduction, No. 1 page 1.)

Professor J. F. Johnson, in his *Lectures on Agricultural Chemistry*, page 218, thus explains the phenomena:—

"If we were about to examine the soil of a field on which we were about to raise a crop of corn, and should find it to contain a certain per centage of vegetable matter (or five per cent. of carbon,) and after the crop is raised and reaped, should, on a second examination, find it to contain exactly the same weight of carbon as before, we could not resist the conviction, that with the exception of what was originally in the seed, the plant, during its growth, had drawn from the air all the carbon it contained. The soil having lost none, the air must have yielded the whole supply. Such was the principle on which Boussingault's experiments were conducted. He deter-

mined the per centage of carbon in the soil before the experiment was begun; the weight added, in the form of manure, the quantity contained in the series of crops raised during an entire rotation or course of cropping, until, the mode of culture adoptad, it was usual to add manure again; and lastly, the proportion of carbon remaining in the soil. By this method he obtained the following results in pounds, per English acre, from a course of—first, potatoes or red beet with manure; second, wheat; third, clover; fourth, wheat; fifth, oats; carbon in tha soil, manure, &c., 2513 pounds; carbon in the crops, 7544 pounds; differcnce, or carbon derived from the air, 5031 pounds. The results of this course indicate that the land remaining in equal condition at the end of the four years, as it was at the beginning, the craps collected during these years contained threc times the quantity of carbon present in the manure, and therefore the plants, during their growth, must on the whole have derivcd two-thirds of their carbon from the air."

The hydrogen of vegetables may be derived from the dccomposition of water during putrescent fermentation of either animal or vegetable substances, or by being scparated from the carbureted hydrogen. This conclusion is arrivcd at from the fact that plants grow with extra luxuriance near stagnant pools, over drains, and even in mines where this gas occurs, vegetables not cxposed to light still maintain their green color.

The earthy, or saline portions of vegetables. are doubtless absorbed when in solution, and all of them are slightly soluble in water; thus silica and all the salts of lime, (carbonate, sulphate, phosphatc, chloride, &c., &c.,) are slightly soluble in water, and solids generally contain them all. But should any be absent, it must be added, but if added when not required, the effect of such additions are seldom beneficial. Analysis or practice are the only guides, and of the two, analysis is the cheapest.

Soluble matters are sometimes received in plants by mere absorption, mechanically, and form no part of their chemical composition, but where the substances are necessary to the growth of the plant, it not only absorbs them, but if they are combined with substances not congenial to the plant, such matters will be parted with as excrementitious; and it is supposed by some, that the accumuation of this matter repugnant to the plant, prevents a second crop of the same plant being raised in the same soil in succession. Many saline substances undergo partial analysis during their reception into the roots of plants, while others are refused by the spongioles altogether, and cannot enter.

Some plants grow with similar success in soils containing greater or lesser quantities of certain salts, and even the quantity given by the plant in analysis will materially differ in plants of apparently equal vigor. The fact may, however, be considered as an exception rather than forming a part of the rule, as most plants are injured by the presence of such soluble salts as they cannot appropriate.

"The preference which plants show for different salts is very remarkable, as demonstrated by the following curious experiments, which were first made by M. Saussure.—(*Thompson's Chemistry*, p. 321.)

In these trials, various salts were dissolved together in water, and plants of *Polygonum Persicaria* and *Bideus Connabina*, with their roots, were placed in the solution; the same weight of each salt was dissolved, and the solution contained one one-hundredth of its weight of each salt, and in stating the result, every salt is supposed to consist of one hundred parts.

	Proportion absorbed by the plant.
1. Sulphate of soda (Glauber salt)	11-7
Muriate of soda (common salt)	22
2. Sulphate of soda	12
Muriate of potash	17
3. Sulphate of soda	6
Muriate of soda	10
Acetate of lime	0
4. Gum	26
Sugar	36

Other plants showed similar results, in the varying quantity of the salts which they absorb; as the Scotch fir, the mentha piperita, (peppermint.) &c., *as long as they were furnished with their roots, but if these were cut off, or removed in any way, the plants absorbed the solutions indiscriminately* The roots, then, are the chief organs for absorbing the food of plants; and of the roots it is nearly established that the extremities are the only parts which have the power of absorption, and hence the reason why they increase in length as the soil at their extremeties is exhausted of nourishment. It is from this cause that liquid manure is so valuable a fertilizer, for in the dissolution of the excrements of animals in water, as practiced so advantageously, and long recommended by Mr. Knight for the adoption of farmers. The dung is only rendered more easily soluble by the plant, and better diffused in the land."

Notwithstanding these facts, a majority of our farmers permit their manures to be exposed to rains and then leave the wash (the more valuable part) to run off or leach into the ground where not required; at the same time preserving with care, as food for their hogs, the thinnest dish-waters of their kitchens.—*Working Farmer.*

(*To be Continued.*)

Experiments with Guano.

Cheraw. S. C. 10th, Feb. 1852.

Mr. Editor:—From the few numbers of your papers which I have seen (having but recently became a subscriber thereto), I find that a considerable diversity of opinion exists among your readers as to the use of guano, as an article of manure; and as an article touching this question may not be altogether unacceptible to them, I will, with your permission, communicate the the result of an experiment made with this article the past season. It was introduced into this State last year, for the first time, and I had consequently, but little information to guide me either as to quantity, time or manner of its application. I received a small lot of guano and gypsum in the spring, after my crop was planted, and as my object was to satisfy myself of the value of these substances, I applied them separately and in combination to almost every production of the field and garden, and to different varieties of soil; and in every instance the application was followed by a rapid growth of the plant.

But in one instance only did I give that attention to the details that would justify my reporting it as a well conducted experiment. The piece of land selected is apart of a thirty acre field, on the river ridge, of light and sandy soil, and of nearly uniform fertility. The time of application was at the first plowing of the corn, and the quantity and manner were as follows: A narrow shovel plow was run round the corn as closely and deeply as practicable; and in this furrow track, a level tablespoonful of guano was deposited opposite to each hill. All the hands engaged in this operation were provided with a charger of uniform capacity, and were directed in depositing it to scatter it six or eight inches in the furrow, but to suffer none to fall out of it. To three rows guano was applied as above de-

scribed, and to three contiguous ones the same quantity of mixture composed of three parts of guano and one of plaster—and thus alternating throughout, the whole plat was manured. After it had been deposited, it was immediately covered with a turning plow so deeply as not to be desturbed in the after culture. On either side of this plat a few rows were left unmanured, and on the balance of the field cotton seed were applied at the rate of twenty bushels to the acre. The quantity of guano, when used alone, was fifty-five pounds, and when in combination with plaster, forty-one to the acre.—As a "tablespoonful" conveys no very accurate idea of quantity, it may be proper to state that the capacity of the one used by me is about a half ounce.

In a few weeks after this application, the corn on the above mentioned plat of ground assumed a dark green color, and soon outstripped any other portion of the field—no difference being observable between those portions treated with guano alone, and the mixture. It continued to grow finely, and promised a lagely increased yield, until about earing time, when it suffered so seriously from drought that I was induced to believe the beneficial effect of the manure to a great extent, if not entirely, lost. To satisfy myself, however, beyond a doubt, I determined to gather the corn carefully and compare the products of the different portions. Accordingly, about the middle of November, I took two hands into the field and weighed row by row, and the result was as follows: Guano alone, at a cost of one dollar and sixty-five cents per acre, as compared with the unmanured portion increased the production three bushels per acre; combination with plaster at a cost of one dollar and twenty-five cents per acre, as compared above, increased the production six bushels per acre.

This result was uniform in a number of comparisons. It was not so, however, in those made between the rows manured with cotton seed and the mixture; here it was varient and unstisfactory. In one trial the cotton seed had the advantage, and in another the mixture. From tho above experiment it seems that the guano, when used alone, will not repay the planter the cost of its application when corn commands less than fifty-five cents per bushel; but when used in combination with plaster, it will abundantly repay the cotton growing States as corn can be grown for a fraction over twenty-two cents per bushel. It was with this last result that I was most highly pleased, as it removed, to a considerable extent, the objection urged against the use of this article—its high price; for plaster not only cheapens the manure, hut adds to its efficiency.

Why this mixture produced better effects, or what agency the plaster had in enabling the corn to resist the drought, are questions which I leave for you to answer, Mr. Editor, and for others who aro better acquainted with the nature of the substances, and the chemical changes they undergo in supplying food to plants,

Before applying, it should be sifted and all the lumps broken, and care should be taken not to place it in immediate contact with the seeds or roots of plants, as a very small quantity of it in its undecomposed state would destroy them. Powdered charcoal, saw dust, and vegetable mould, are recommended to be suitable substances with which to compost it; but the former, perhaps, is preferable to all others, as it fixes the ammonia, deprives it of its unpleasant odor, and is of itself a valuable manure. All substances to be used in combination with it in forming a compost should be entirely dry, as moisture produces immediate decomposition and thereby disengages those gases which constitute its chief value, and for this reason perhaps, as well as for others, it is not deemed judicious to compost it with stable or barn-yard manure.

I have used plaster of Paris to some small extent for several seasons. Its application to corn when not combined with other manures, has uniformly failed; but on peas and cotton, it has invariably produced satisfactory results. My manner of using it on cotton, is to roll the seed in it previous to planting; using for this purpose about one bushol to twenty-five or thirty of seed. This small quantity (which might be judiciously increased to one bushel per acre to be applied, immediately after the seed are sown, and before they are covered), promotes an early and vigorous growth of the young plant, and diminishes the labor of cultivation.

Lest I weary your readers, I must close this communication, already extended to an undue length. They are now in possession of my opinion, and of some of the facts upon which it is founded; and that they may know how my practice accords with that opinion, it is proper to state that I have ordered, and intend using, a large quantity of these articles the present season, in manuring corn, cotton and small grain; and as I desire as little to mislead as to be misled, I will report through your paper at the end of the year, should the effects of this more extended trial be less favorable than what might be anticipated from the small experiment detailed above. JOHN W. LEAK.

Soil of the South.]

Bark-bound Trees.—Some over-wise people have an idea that when a tree gets mossy and barkbound—the latter but another term for the want of growth and weakness, consequent upon neglected cultivation—it is only necessary to slit the bark up and down the stem with a jackknife, and it will spread out and grow. This is sheer nonsense. Dig about and cultivate the roots, and the bark will take care of itself, with a scraping of the moss, and a washing of the stem with ley or soap suds, or chamber slops, which last is quite as good. The increased flow of the sap, induced by a liberal feeding of the roots, will do its own bursting of the 'hide-bound' bark, which is simply its enfeebled condition as a consequence of its poverty of root. No one thinks of turning out a bony, half-starved calf in the spring, into the clover field, with the skin on its sides all split through with a knife in order to add to its growth. And this last proposition is quite as sensible as the other. Nature takes care of itself in these particulars. Sap in plenty is what the blood is to animals. Its vigorous flow reaches every part of its composition, and gives to each its proper play and function. We can show frequent instances of a decrepid shriveled branch, by throwing open and manuring of the roots, and thorough pruning of the whole top, increasing from an inch to two inches diameter in a single season; and without assistance as it grew, bursting and throwing off its old contracted bark as freely as the growth of a vigorous asparagus shoot would develop itself during a warm shower in May. Such nostrums are only the invention of the head to excuse the laziness of the hands.

[*Am. Agriculturist.*

A Maxim.—To enable a man, or a horse, to do a full day's work each must be well fed—to enable the earth to yield a plentiful crop, *it* too, must be well fed. Without a large portion of the material to make it out of, be in the soil, a vegetable product cannot be perfected.—*Ibid.*

When attacked by vulgar and brutal languages, be as mild as possible in your replies.

Tempering, Hardening and Softening Metals,

USED IN THE MECHANICAL ARTS.

(Continued from page 88.)

In hardening and tempering steel, there are three things to be considered; namely, the means of heating the objects to redness, the means of cooling the same and the means of applying the heat for tempering or letting them down. I will speak of these separately, before giving examples of their application.

The smallest works are heated with the flame of the blow pipe, and are occasionally supported on charcoal. *(See Soldering.)*

For objects that are too large to be heated by the blow-pipe, and too small to be conveniently warmed in the naked fire, various protective means are employed. Thus, an iron tube or sheet-iron box inserted in the midst of the ignited fuel, is a safe and cleanly way; it resembles the muffle employed in chemical works. The work is managed with long forceps made of steel or iron wire, bent in the form of the letter U, and flattened or hollowed at the ends. A crucible or an iron pot about four to six inches deep, filled with lead and heated to redness, is likewise excellent, but more particularly for long and thin tools, such as gravers for artists, and other slight instruments; several of these may be inserted at once, although towards the last they should be moved about to equalize the heat; the weight of the lead makes it desirable to use a bridle or trevet for the support of the crucible. Some workmen place on the fire a pan of charcoal and heat it to redness.

Great numbers of tools, both of medium and large size, are heated in the ordinary forge fire, which should consist of cinders rather than fresh coals; coke and also charcoal are used, but far less generally. Recourse is also had to hollow fires; but the bellows should be very sparingly used, except in blowing up the fire before the introduction of the work, *which should be allowed ample time to get hot*, or, as it is called, to "*soak*."

It is a common and excellent practice among some workmen, to use coke both in forging and hardening steel goods.—They frequently prepare it for themselves, either upon the forge-hearth, or in a heap in the open yard.

Which method so ever be resorted to for heating the work, the greatest care should be given to communicate to all parts requiring to be hardened, a *uniform* temperature, and which is only to be arrived at by cautiously moving the work to and fro, to expose all parts alike to the fire; the difficulty of accomplishing this of course increases with long objects, for which long fires of proportionate length are required.

It is far better to err on the side of deficiency, than of excess of heat; the point is rather critical, and not alike in all varieties of steel. Until the quality of the steel is familiarly known, it is a safe precaution to commence rather too low than otherwise, as then the extent of the mischief will be the necessity for a repetition of the process at a higher degree of heat; but the steel if burned or overheated will be covered with scales, and what is far worse, its quality will be permanently injured. A good hammermering will, in a degree, restore it; but this in finished works is generally impracticable.

It is argued by some, that by heating pieces of steel to different degrees, before plunging them into the water, the one piece attains full hardness, the next the temper of a tool fit for metal, another a tool fit for wood, the fourth that of a spring, and so on. That this view is not altogether without foundation, appears in the fact that if the end of a piece of steel be made entirely hard, the transition is not quite immediate from the hard to the soft part; in making points, such as are used in a dividing engine, it is customary to harden the end of a longer piece of steel than is required, and form the point upon the grindstone, exactly at the point where the temper suits, without the steel being let down at all. In hardening by this method, however, without tempering, the scale of proper hardness is confined within such extremely narrow limits as to be nearly useless; thus, it frequently happens that in a number of tools heated as nearly alike as the workmen could judge, some few would be too soft for any use, although they were all intended to receive the ordinary hardness, so as to require letting down as usual with those tools exposed to violent strains or blows, such as screw taps, cold chisels, and hatchets, although many tools for metal, used with quiet uniform pressure are left of the full hardness for greater durability.

With the *excess* of heat beyond the lowest that will suffice' the brittleness rather than the hardness of tools is increased; and when *no excess* of heat is employed, beyond that absolutely requisite for hardening in the usual manner, the steel does not appear to be injured, and the colors on its brightened surface that occur in tempering, are excellent, and in general, sufficiently trustworthy index of the inferior degree of hardness proper for various uses.

Less than a certain heat fails to produce hardness, and in the opinion of some workmen, has quite the opposite effect, and they consequently resort to it as a means of rapid annealing, not, however, by plunging the steel into the water, and allowing it to remain until cold, but dipping it quickly, holding it in the steam for a few moments, dipping it again, and so on, reducing it to the cold state in a hasty but intermittent manner.

There is another opinion prevalent among workmen, that steel which is "pinny," or as if composed of a bundle of hard wires, is rendered uniform in its substance if it is first hardened and then annealed.

Secondly, the choice of the cooling medium has reference mainly to the relative powers of conducting heat they severally possess; the following have been at different times resorted to with various degrees of success: currents of cold air; immersion in water in various states, in oil or wax, and in freezing mixtures; mercury, and flat metallic surfaces have been also used. Mr. Perkins recommended, as the result of his experiments, plain water at a temperatnre of 40° Fahrenheit. On the whole, however, there appears to be an opinion that mercury gives the greatest degree of hardness; then cold salt and water, or water mixed with various "astringent and acidifying matters;" plain water follows; and lastly, oily mixtures.

I find but one person who has commonly used the mercury; many presume upon the good conducting power of the metal, and the nonformation of steam, which causes a separation betwixt the steel and water, when the latter is employed as a cooling medium, I have failed to learn the *reason* of the advantage of salt and water, unless the fluid have, as well as a greater density, a superior conducting power. The file makers medicate the water in other ways, but this is in one of the mysteries which is never divulged, although it is generally supposed that a small quantity of white arsenic is generally added to water saturated with salt. One thing, however, may be noticed, that articles hardened

in salt and water are apt to rust, unless they are laid for a time in lime-water, or some neutralizing agent.

With plain water, an opinion exists very largely in favor of that which has been used over and again, even for years, provided it is not greasy; and when the steel is very harsh, the chill is taken off plain water, to lessen the risk of cracking it; oily mixtures impart to *thin* articles, such as springs, a sufficient and milder degree of hardness, with less danger of cracking than from water; and in some cases, a medium course is pursued by covering the water with a thick film of oil, which is said to be adopted occasionally with scythes, reaping-hooks, and thin edged tools.

From experiments upon all these means, we are induced fully to acquiesce in Mr. Perkins' recommendation of plain cold water for general purposes; except in cases of thin elastic works, for which oil or oily compositions are certainly more proper.

A so-called natural spring is made by a vessel with a true and false bottom, the latter perforated with small holes. It is filled with water, and a copious supply is admitted beneath the partition, it ascends through the holes, and pursues the same current as the heated portions, which also escape at the top. This was invented by the late Jacob Perkins, and was used by him in hardening the rollers for transfering the impressions to the steel-plates for bank-notes.

Sometimes when neighboring parts of works are required to be respectively hard and soft, metal tubes or collars are fitted tight upon the work, to protect the parts to be kept soft from the direct action of the water, at any rate for so long a period as they retain the temperature suitable to hardening.

The process of hardening is generally one of anxiety, as the sudden transition from heat to cold often causes the work to become greatly distorted, if not cracked. The last accident is the most likely to occur with thick, massive pieces, which are, as it were, hardened in layers, as, although the external crust or shell may be perfectly hard, there is almost a certainty that towards the centre the parts are gradually less hard; and when broken, the inner portions will sometimes admit of being filed.

When in the fire, the steel becomes altogether expanded, and in the water its outer crust is suddenly arrested, but with a tendency to contract from the loss of heat, which cannot so rapidly occur at the central part; it may be therefore presumed that the inner bulk continues to contract after the outer crust is fixed, and which tends to tear the two asunder; the more especially if there be any defective part in the steel itself. An external flake of greater or less extent, not unfrequently shells off in hardening; and it often happens that works remain unbroken for hours after being removed from the water, but eventually give way and crack with a loud report, from the rigid unequal tension produced by the violence of the process of hardening.

The contiguity of thin and thick parts is also highly dangerous, as they can neither receive nor yield up heat in the same times; the mischief is sometimes lessened by binding pieces of metal around the thin parts with wire, to save them from the action of the cooling medium. Sharp, angular notches are also fertile sources of mischief, and, where practicable, they should be rejected in favor of curved lines.

As regards both cracks and distortions it may perhaps be generally said, that their avoidance depends principally upon *manipulation, or the successful management of every step.* First, the original manufacture of the steel, its being forged and wrought, so that it may be equally condensed on all sides with the hammer, otherwise when the cohesion of the mass is lessened from its becoming red-hot, it recovers in part from any unequal state of density in which it may have been placed.

While red-hot it is also in its weakest condition; it is therefore prone to injury either from incautious handling with the tongs, or from meeting the sudden cooling action irregularly, and therefore it is generally best to plunge works vertically, as all parts are then exposed to equal circumstances, and less disturbance is risked than when the objects are immersed obliquely, or sideways into the water; although for swords, and objects of similar form, it is found the best to dip them exactly as in making a vertical downwasd cut with a sabre, which for this weapon is its strongest direction.

Occasionally objects are clamped between stubborn pieces of metal, as soft iron or copper, during their passage through the fire and water. Such plans can seldom be adopted, and are rarely followed, the success of the process being mostly allowed to depend exclusively upon good general management.

In recent experiments in making the magnets of dipping-needles, which are about ten inches long, one-fourth of an inch wide, and the two-hundredth part of an inch thick, this precaution entirely failed; and the needles assumed all sorts of distotortions when relieved from between the stiff bars within which they were hardened. The plan was eventually abandoned, and the magnets were heated in the ordinary way, within an iron tube, and were set straight with the hammer after being let down to a deep orange or brown color Steel, however, is in the best condition for the formation of magnets when perfectly hard.

In all cases the thick, unequal scale left from the forge, should be ground off before hardening, in order to expose a clean metallic surface; otherwise the cooling medium cannot produce its due and equal effect throughout the instrument. The edges also should be left thick, that they may not be burned in the fire; thus it will frequently happen that the extreme end or edge of a tool is inferior in quality to the part within, and that the instrument is much better after it has been a few times ground.

"He that will a good Edge win,
Must Forge thick and Grind thin."

(To be Continued.)

On the Cultivation of Reclaimed Salt Marshes.

Sir:—I send you a few observations on the cultivation of Sea-Island or Black Seed Cotton, on reclaimed salt marsh.—Should the experiments I have made, prove in any manner serviceable to the agricultural interest of our country, I shall be gratified;—and have very hastily thrown together a few remarks from which you may perhaps be able to glean something.

The lands I have in the culture of cotton are situated at the head of salt water creeks, and commonly called coves or hard marshes. They produce several kinds of salt-weed; such as rushes, wire-grass, samphire or marsh-mallows, and common marsh. In some places too soft to bear the weight of cattle; but generally fed upon by them. The lower parts covered by common tides, the upper, by spring tides, and when strong eastwardly winds prevail. The soil for six inches deep, principally consists of the fibrous roots of these grasses; but below this, black mud, blue, and sometimes yellow clay is found. The labor of banking in these lands must depend much upon

their situation: but the labor of bedding up for planting is very great. The ablest hands completing but four or five rows of 105 feet per day. They can scarce be ditched too much, as the land should be kept very dry, and as the mud and clay thrown out from the ditches, tend exceedingly to the quick growth and maturity of the cotton. I plant in holes on the beds about three feet apart, putting into each hole at the time of planting, a large double handful of high-ground earth. This, I have carried in baskets, and find it extremely slow, laborious work.

The second year I planted in holes, merely pulling up the old stalks. As soon as the cotton was well up and thriving, the beds were lightly hoed down into the alleys, where a list was formed and left for ten days. This list was then hauled back upon the beds, and two more common haulings or hoeings up, by the middle of July, when the crop was laid by. At the last thinning, in June, two stalks were left in each hole. The labor of culture is not great the second year, if the beds are not changed, and you plant in the same holes. And some planters among us state this method, according to their experience, to be the best.

In 1825, (my first trial,) I planted four and a half acres, in the first week in April. The season this spring being very wet, the cotton sprouted in a few days, and throve luxuriantly, until the caterpillar attacked it, about the middle of September. To these four and a half acres, however, I made nine hundred pounds of clean white cotton, and sold it at fifty-six cents per pound, when my other cotton brought only twenty-four cents per pound.

In 1826 I planted about twenty-five and a half acres more; but the unprecedented drought of that spring, prevented the cotton from coming up, until the latter part of June; except in a few moist spots. The seed germinated, but could not force itself through the earth for want of moisture; and the consequence was, that to thirty acres, I only made fifteen hundred pounds of clean white cotton. This sold for only thirty cents; the rest of my crop for twenty and a half cents.

This year, 1827, I have planted these same thirty acres. This spring being the finest I have seen for years, the cotton came up immediately and throve vigorously until the middle of June; when the salt water breaking over my banks, covered the tops of my beds and injured the cotton considerably, by making it cast off a quantity of leaves, blossoms, forms and pods. In August, very heavy rains in quick succession, overflowed my beds again and caused a shedding as before. And now I have barely got the fields well-drained of another flood, by rain, on the seventh and eighth of this month.

These three inundations have injured the cotton considerably; but as it has commenced opening tolerably, I may reach three thousand pounds, if we have no very severe frosts before the first week in November. If I make this, I shall esteem myself fortunate, after my mishaps, and after this trying season. I am now busy in banking-in more of this land, and hope, my expectations, that it will prove an advantageous range of culture, may not be disappointed. The pods are certainly more numerous and larger, adhere more tenaciously to the stalks in trying seasons, and mature sooner.

Although little may be made some years, from the destruction by hurricane or caterpillar, yet, the higher price it bears on account of its superior quality, may occasion no loss. And I am clearly of opinion the product by quantity can be very great, (quality and high price still making it greater,) as the power of guarding against inundations of either salt or fresh water is in our own hands, by increasing the banks and drains.

But I hope I may not mislead others. There is something yet to be correctly ascertained about this wild experiment as I have frequently heard it called. I know planters who have tried it some years, who are now against it. They state these lands, by repeated culture, to be disposed to take what we denominate the blue rust; that is, overgrown stalks, falling to the ground with large leaves, of a dark, bluish green, sometimes greyish color, and few or no pods.

Indeed, the first year of my culture, it appeared in spots, and I found neither lime, salt water, nor making large fires on these places, with old rails, underwood, stubble, &c., had any good effect. Land exhibiting any signs of iron-ore, is sure to be affected. And we can only observe with any certainty, yet, that there is less of it in dry years than in wet. Draining, therefore, will perhaps be the best remedy. To sprout the seed, in a dry spring, is also another great difficulty. How to obviate this, we know not.

Thus, Sir, I have endeavored to give you a few hints relative to this species of culture. I am yet only three years old in experience, and shall be always willing, I hope to answer any questions you may please to ask, and to give any information I may be able to obtain, relative to the work in your hands; but request you to consider I give nothing by way of disputation. Other lands, other seasons and other experiments may give other results. If I think them better than my own I shall be happy to follow them; for I am much inclined to believe I should be more sorry to mislead myself than others, and am therefore perfectly willing to be instructed.

Yours, respectfully, X. Y.

—*Southern Agriculturist.*

Asparagus.—Take a bundle and lightly scrape the white part, beginning from the head down, and throw them when done into cold water, then tie them up in bundles of twenty-five each, if an ordinary size, if very large half that number, keeping the heads together, and putting those of the same length in the same bun-bundle, throw the bundle into boiling water, add a little salt and boil briskly for fifteen minutes, or till tender; have a layer of dry toast on your plate, lay the bundles on with their heads at the centre and carefully cut the strings; let the longest bundles form the lowest layer, thus dressing it in the form of a pyramid. Serve very hot with cream or butter sauce poured over it.

Baked Eggs with Asparagus.—Cut twenty heads of asparagus into small pieces, boil them fifteen minutes, put them into a stewpan with half an ounce of butter, set them on the fire for three minutes, season with a little pepper, salt and sugar; when done, put them into the dish you wish to serve them in, break six eggs carefully over, sprinkle salt and pepper on them and put the dish in the oven till the eggs are set.

Eggs are good simply baked in a buttered dish with asparagus, or put into a flat dish that will bear the oven, a piece of butter the size of a walnut, the same of grated cheese, the yolks of two eggs, some grated nutmeg or cinnamon; mix these on the dish, put it in the oven till set, then gently break six eggs on the dish and grate cheese over and replace in the oven till set, and serve hot.

Theory is the guide of practice.

Mules and Horses for the use of Farmers.

Messrs. Editors:—I have long felt a desire to contribute something to your very valuable paper. I have read some articles on the merits of mules and horses, and have had a strong desire to say something on the subject, but a sense of my inability to write, has held me back till now. I will try, for the first time, to give my observations as to their use and value. When I commenced trying to farm, I had two young horses—one went blind, and was entirely useless to me. I supplied his place with another, that also went blind. The other one died with blind staggers, and the one I bought to fill his place, took the big jaw. I had frequently refused $150 for him before his disease, but let him go as part payment for another at $10, and got one that would seldom work. Necessity compelled me (notwithstanding my prejudice) to try mules. I gave $75 for a mule two years old—and this is the thirteenth crop that she has ploughed, and is now worth $120. She has been worked hard at the plow, wagon, gin, screw and buggy, and will now do a dollar's worth of work without a dollar and a half's worth of whipping to get it. She is gentle, easy to manage and free, so that my wife, and some other female relations, will not work any thing but that mule when they have to drive themselves. She is not one of the slow, stiff necked sort, that your correspondent writes about—indeed sirs I have none of that kind. And I think no one need have them, if they will take time while breaking to rest them when they need it, for they will worry themselves at first, and if whipped before they know what it is for, they become stubborn and contrary, for which they are whipped till they get used to it, and then it does more harm than good. It may be asked how the plowing is to be done while the mule is resting? we should not expect a young mule to do full work. They will do as much work in four days, when rested, as they will in six, when tired. Besides, they fail to eat when they are wearied down, then half work will keep them on the decline. Then, instead of a weeks rest, the driver is ordered to use the whip, for it is sullen—whip it and make it go if it kills it, for a mule will be a mule—and thus we give them the very qualities that we hate and abuse them for possessing. I have one that I bought in September, '44—worked her moderately at first, and would not allow her to be hurried or whipped. Let me say a little about her: I paid $90 and have refused $175 for her. I have had her worked very hard in the plow, gin, wagon and buggy. I have eat my breakfast at home and drove forty miles to dinner, or by 2 o'cleck; and frequently drive her all day without a whip. I also have a horse which I drive sometimes. Frequently when a trip is proposed, I am asked by my friends, whether I will drive my horse or mule. If the latter they object to going in company with me, because they will have to drive too hard to keep up. I have been particular to mention these facts, because one of your correspondents has said that mules were so much slower than horses. You will please excuse the digression, as it is my first effort.

I will now give you two facts—first, the cost of all my mules, the work they have done, and their present value. Secondly the cost of all my horses, the work they have done, and their present value:

I now have six mules, for which I paid $565. They have in the aggregate done me thirty-three years work (including the present). They are now worth $750—I would not take eight hundred for them. I have owned five others, for which I gave $330, and they done me twelve years work—I then sold them for $425. I have owned eleven mules, and got forty-five years work without loosing one of them. I sold because I was compelled to buy such as did not suit me, for the want of good lots to select from.—But in every instance I got from $5 to $40 more than I gave, after working them from two to three years. The total cost of the eleven mules was $875; sold five for $425; value of six on hand, $750. If I were to sell the six, which I could readily do, for $750, I would have $350 more for the mules than cost, besides their forty-five years work.

Now for the horses. I have owned the same number of horses, for which I gave $910. They have done me 16 years work (including the present). I have sold a part of them for $450. I did not get as much for any of them as I gave, except one that I sold soon after buying—never traded any of the others until after they failed to answer my purpose on the farm. One that I could not work I sold on a credit for $60 and have not collected one dime. I now own a mare and horse that I suppose are worth $175. So you see that the sixteen years work of the horses cost me $345, besides the fattening of the horses for sale after they became useless to me. It now takes the mare and horse both to do as much hard work as one mule.

As for their food, my observation is, that when corn is plenty and cheap, the mules eat about as much while at work as the horses; but when corn is scarce or high, the mules will live on one half of the corn that the horses will, provided the mules have as much shucks, straw, and fodder as they can eat, well cut and moistend with salt water a day before feeding with them. And when not at work, the mules will get fat on a pasture that the horses will decline on.

Mules stand the heat and flies better than horses, and tread down less corn and cotton in plowing, and require less time to rest. I have noticed at noon when the plows stop, all appear equally tired, the mules dry off and are as much revived in one hour as the horses are in two.—Also, after a long journey, mules are as much revived in three days as horses are in a week.

Every farmer should have mules instead of horses, and should raise them at home, from the very best blooded and largest mares that he can get. Mules take their qualities principally from the mare. If she is spirited and free I will ensure the mule not to be slow, if treated properly in breaking.

It may be proper here to state that I traded some bad debts for two mules, which I left out of the calculation, because I did not get them for the farm. I have had the best luck when I paid the highest prices for choice mules; fine hair, clean limbs, high headed, small ears, the wildest and fastest in the drove. I do not want a long haired, big leged, and flap-eared mule.

I have given these facts from memory but I think they are correct. If you consider them worthy of a place in the Farmer and Planter, they are at your service.

Half a Farmer.

Alabama, May, 1852.

P. S.—Since writing the above, I have seen in Vol. 1. No. 8, of the Farmer and Planter, Mr. Latham's communication on horses and mules. If I had the ability to write what I know, I should like to notice some things in his article, for my observation differs from his. He says, that he, (referring to the horse) may be worked by a small boy, or half-hand, while if you want anything done with that hybrid animal, you must place him in charge of the best hand on the plantation, and then, as likely as not, at the sound of the dinner horn, in defiance of the strongest arm, he will strike a straight line for the house. Not so with any of mine, for my smallest boys plow my mules, so I presume the difference is in breaking them, or in their management when young. He also says something about supply, if they never die. As prejudice gives way and their true qualities and worth are known, they are then appreciated and properly taken care of. All who give them a fair trial, know their superior adaptation to farm work, hence the continued demand for this oft abused but most valuable animal. For some years I had no horse—the one I now have I got for a temporary use, and the mare to raise mules from, as I believe it is the best policy of the planter to raise as nearly as possible every thing he needs.

Three of the mules that I have were raised near me—I know their dams—hence I say that mules partake of the qualities of the mare. I have had a conversation with a neighbor on this subject, and his experience is more in favor of mules than mine. He has lost in horses, 15 or $1600; in mules, not more than $150; while the latter has done him more than five times as much work. He has some that he has worked hard for 17 or 18 years. They are good mules yet, and small boys can now plow them. He and others have mules equal and superior to mine on the whole. H. F.

Balking of Horses.—We have always looked upon the habit of balking of horses as incurable. We have seen it lately stated that the Mexicans overcome this propensity by the following kindly treatment:

The driver approaches the head of the horse, pats him gently on the neck and head speaking soothingly all the while; after a few minutes, the horse's sulky humor somewhat subsides, the driver commences to blow very gently up [illegible] which he continues

to do for a few minutes, then soothes and pats him again, and repeats the blowing up the nostrils, when the animal will be found to have been subdued. This is the plan also as stated by Catlin, that the buffalo calves are tamed by the Indians; whether it will prove successful in conquering this radical fault in the horse, we know not. It may, however, be worth a trial.

So far as our experience goes, kindness is one of the best correctives of bad habits, either in man or beast, and it may be that the gentle treatment indicated above may be efficacious.—*Am. Farmer.*

Durability of timber depends more on the treatment after cut, than the time of cutting.* The amount of sap in a tree is about the same at all times. But a large log, in hot weather, with the bark on, having no chance to dry, soon decays; but if immediately sawed into boards, they dry in a few days, and become hard and durable.—*Exchange.*

*Doubted.—Eds. F. & P.

Salt for Domestic Animals.

BY LEVI BARTLETT.

Farmers in the same neighborhood differ widely in their views upon the most common farm operations, such as to the depth of plowing; the width and angle of the furrow slice; the application of manures, whether it should be spread upon the land before plowing, or after this operation, &c., &c. It is less strange that they should entertain different opinions in regard to other rural matters, not so palpably visible. Thus, while one farmer uses many bushels of salt annually for his farm stock, another scouts the idea of its use in either large or small doses. Some farmers practice salting their hay at the rate of one bushel of salt per ton. Mr. Pell of Ulster Co. N. Y., several years ago, gave, in some agricultural paper, an account of his method of curing hay; which was to get it very green and sprinkle on it one bushel of salt to one ton of hay. This statement called out several farmers in reply; and one of them pronounced "his practice actually cruel," to thus compel his cattle to eat such a quantity of salt. Some farmers use but two, others four quarts to the ton of hay, while perhaps a very large majority use none upon their hay at the time of storing it in their barns.—Thus practical farmers disagree. How are we to decide the question, whether cattle should be supplied with salt, or not? Reasoning from the instincts of our domestic animals, and the researches in animal physiology, I can come to no other conclusion than this, that the health and thrift of our farm stock, in many sections of the country, depend much upon a full supply of salt, and that the pecuniary interests of the farmer require that he should, in some form, afford this supply.

The Creator has given to man reasoning powers and speech, by which he can communicate his wants, his likes and dislikes, and orally express them. To animals he has given instinct, which guides them in the selection of their food, and in a good degree, teaches them to avoid that which is hurtful or poisonous. The almost universal relish our domestic animals manifest for salt, indicates most clearly, I think, the necessity of their being supplied with it; and this desire for salt is not confined to our domestic animals alone. The salt *licks* of the west were formerly much frequented by the buffalo, elk, deer, and the huge mastadon, and other animals, for the purpose of obtaining salt, so necessary to their well being. Our cattle have not the use of an intelligible speech; but—"actions sometimes speak as plain as words, and the actions frequently manifested by cattle for salt cannot be misunderstood. They mean, give us salt; the cravings of *nature* require it, and most farmers believe this fact. Therefore some good farmers keep salt in troughs, under cover of a shed, where their cattle have access to it through the year. In these cases, it is probable that the cattle just take what is necessary, no more, no less. Others give salt to their cattle, sheep, &c., once a week; whether this is as often as necessary, (especially in the early part of the pasturing season, when the grass is tender and succulent,) admits of some doubt. Besides, they may eat too much at such times, and the weaker ones may not obtain their share.

Chemical analysis long ago taught us that the bones of animals were chiefly formed of phosphate of lime; but it was not known, until the publication of a work on animal physiology by Prof. Liebig, some three or four years ago, that the chloride of sodium (common salt) and phosphate of soda were invariably found in the blood, and that the phosphate of potash and the chloride of potassium were of constant occurrence in the juice of the flesh. These facts prove that these substances are indispensible for the healthy process carried on in the blood, and in the fluid of the muscles. Says the Professor: "Proceeding on this assumption, the necessity for adding common salt to the food of many animals is easily explained, as well as the share which that salt takes in the formation of blood, and in the respiratory process. It is a fact now established by numerous analyses, that the ashes of inland plants, growing at a certain distance from the sea, contain no soda, or only traces of that base. The potashes of inland countries rarely contain any carbonate of soda, while the ashes of the same plants, growing in maritime countries, near the sea-coast,—contain phosphate of soda and common salt;—therefore the food of animals is not in all places of the same quality or composition, in respect to the two bases, potash and soda."

"An animal feeding on plants which contain phosphates of other bases, along with some compounds of soda or sodium produces in the body the phosphate of soda, so indispensible to the formation of blood. But an animal living inland obtains from the weeds, herbs, roots, and tubers which it consumes, only salts of potash. It can produce from the phosphates of lime and magnesia, by decomposition with the salts of potash, only phosphate of *potash*, the chief inorganic constituents of its flesh, but no phosphate of *soda*, which is a compound never absent in *healthy* blood. When in inland countries, the food does not contain common salt enough to produce the phosphate of soda necessary for the formation of the blood, *then salt must be added to the food.* From common salt is produced in this case, by mutual decomposition with the phosphate of potash, or with earthy phosphates, the phosphate of soda of the blood.

"The phosphate of soda is indispensible to the normal constitution of the blood and that the process which go on in that fluid, cannot be replaced by the phosphate of potash, seems to me an opinion fully justified by the properties of these two salts."

It seems to me, there can be no doubt in the mind of any one of the correctness of the views of Prof. Liebig, in regard to the utility of supplying farm stock with salt in sections of the country remote from the sea-board, especially when we take his views in connection with other familiar and well established physiological facts.

Phosphoric acid and lime are indispen-

sible in the formation of bones of animals, and no other substances will answer that pupose. If the hay or grass upon which a mileh cow is fed is deficient in phosphoric acid and lime, instinct points out a remedy; the cow takes to eating bones, to supply the deficieney of bone earth in her natural food. If she cannot obtain a sufficieney of phosphates for her milk,—and to supply the daily waste going on in her bones and other portions of her system, emaciation and weakness follow, and sometimes death, from what is called the "bone disorder." A certain remedy for this disorder is to be found in giving to the cows the fine bone dust from the button mould factories. A gill a day, given to a milch cow for a few weeks will eure the propensity to eat old bones, and restore her to strength and health. There is no theory about this—it is a matter of fact. I have procured several barrels of the bone saw-dust from the button factory at Brighton, as a medicine for the cows of farmers and others in this vicinity; and the past summer I furnished to a number of farmers the ground mineral phosphate of lime for the same purpose and with equally good results. Lime is the principle mineral ingredient in the formation of a egg shell. If a hen is shut up and fed wholly on food containing *no* lime, it may occasionally lay an egg; but it will have no shell. A hen can no more generate lime than she can gold or silver; nor any more transmute any other substance into lime, to form her egg-shell, than she can produce the new three cent pieces of coin from gravel stones. Sulphur is a prominent constituent of the yolk of an egg, that is derived from the food upon which a bird subsists. No other substance will supply its place in the formation of the perfect egg, and "any bird which can organize a perfect egg, without a particle of sulphur to enter into the composition of its yolk, can create and lay a little world with all its inhabitants."

The blood of animals is made up of globules, some of which are white, and others red; the red globules owe their color to the oxide of iron. In those diseased states of the blood in which the red particles are deficient in quantity, the functions of life are languidly performed; by the administration, in medicine, of the salts of iron, the florid color of the blood and complexion is restored, and the general state of health is improved. Probably, from some disarrangement of the assimilating vessels in those persons whose blood is deficient in coloring matter, the vessels do not take from the food sufficient iron; therefore, in such cases, it is given direct, and in larger quantity than is usually found in the food, and with good results.

Common salt is a combination of muriatic acid with soda, an element (in connection with certain acids) so necessary to a healthy state of the blood. Clover, redtop, and herds grass, grown near the ocean, contain so much salt as to render the salting of cattle fed upon it unnecessary, while the same kind of grasses grown here, some sixty or seventy miles inland, is so deficient in soda, that it becomes a matter of much consequence that our cattle should be supplied with salt, for a certain amount of soda from some source or other, is required in the blood, and required, too, by a *law* more immutable than that of the Medes and Persians. 'Tis this law that induces the "salt hungry" cow, or horse, to lick, for the half hour together, an old cask that has been used for salting meat.—*Journal of Agriculture.*

Hilling Indian Corn.

It is a mooted question in the agricultural world, and will probably long remain an undecided one, whether Indian corn should be "HILLED." For my own part, I confess that both observation and experience have convinced me that it should not. I do not intend to discuss the subject philosophically in this paper, but merely state the result of experiments. In the summer of 1850 I had a piece of corn—comprising about one acre—half of which I hilled up with a broad, conical hill at the last hoeing, the other being left flat. Both plans were decidedly good, and both had received the same quantity of manure, and precisely the same cultivation, with the exception above named. In July there came a heavy tornado, and the corn in both pieces was much prostrated, but on examining, I found that the hilled piece was broken off in many cases, indeed in almost every hill, while the unhilled or level part had escaped. The consequence was, that the plants on the latter *rose*, while those on the former did not, but retained, to a great extent, the recumbent pesition they had been compelled to take by the wind. There was also a very perceptible difference in the quantity of the crop in favor of the former. Now let us examine the reason of this. When fresh soil is brought up around the corn stalk, it induces a fresh evolution of brace or latteral roots, and this every time fresh accessions of dirt are made. But the brace roots do not tend in a powerful degree, to the support of the plant; they are too superficial—the soil is light, and they sway with the swaying of the plant. Besides, the effect of the dirt is to blanch and render brittle the portion of the stalk around which it is placed, and consequently liable to snap off before even a moderate wind. If no dirt was to be brought up, the original laterals or brace roots, would extend themselves, acquire size and energy, and be capable, by their magnitude and strong hold upon a firm soil, of supporting the plant in any wind. My plan is to plant so as to have the rows run both ways of the piece, *i. e.* cross each other at right angles, which admits of working the crop with the harrow or cultivator, and to keep the surface entirely *level*. There is no philosophy whatever, in making any elevation above the roots, so far as the support of the plant is concerned, and it must be obvious, I think, to every reflecting person, that the exposure of an extra extent of surface, in a dry time, as in the case of hilling, must increase the effect of drought.—*Cor. Herald and Free Press.*

Shade Trees.

The elegance, as well as luxury, of a plentiful supply of shade trees about a dwelling, should be a sufficient inducement to every one who has a home, to expend a little care, at least, in their cultivation.

In order to succeed in making trees live, and enjoy a luxuriant growth, it is only necessary to pay attention to a few facts in regard to their nature. Attention to the following points is all that is essential:

1st. The roots.—In removing the tree from its orignal position, great care must be taken to preserve all the fine fibres, which alone draw nourishment from the earth, and yet which are so commonly cut or broken off as being valuless. In perennial roots, these fibres die each autumn, and in this climate are produced early in the spring, about the time the frost is leaving the ground. From this fact it is best to transplant trees in the fall, after the old fibres have ceased to absorb nourishment, and may be removed without injury. If removed in the spring their place will not again be supplied, and the tree in most cases dies. It is best to remove a portion of the main roots, and a proportionate amount of the tops—though not to exceed the fourth part of

each.

2nd. Preparation for planting.—The holes for receiving the tree should be spacious. and a little manure well mixed with earth placed at the bottom. The tree should occupy a perfectly upright position and the roots covered with fine earth and left to occupy as nearly as possible their original positions, and be firmly fixed in the ground. and supported by a post to prevent their being blown out of this position. If the season is dry, a little water should be poured about the roots each evening. It is better to take pains to have one good tree, than to have half a dozen sickly, half-dead ones.—Good shade may be procured in two years time, if proper care is taken in planting them.—*Wisconsin and Iowa Farmer.*

Management of Servants.

Mr. Editor.—At the request of some of my friends, I send an article on the management of servants.

Young servants should not be suffered to run off and hide when the master comes up, or any other white person; they should be taught to stand their ground, and speak *when spoken to*, in a polite manner; have them well clothed and this thing is more easily accomplished. A lot of ragged little negroes always gives a bad impression to strangers, and is often the cause of their running away and being hard to manage when grown. Talk to them; take notice of them; it soon gives them confidence and adds greatly to their value. Some few persons are too strict with servants; but for every one who errs in this way, one hundred may be found who go to the opposite extreme, and let them idle away their time and do no more than half work.—The result is, in many cases, the master breaks, the white family is left in poverty, and the poor negroes are sold. No one can treat negroes well who does not make them work, and take care of what is made and bought. They become restive, run about at night for want of exercise in the day, to pilfer, and visit, hear news, &c., &c. Adams &co.'s express can't beat them in the transmission of all sorts of reports; they travel from ten to thirty miles in a night, and many, it seems. do with less sleep than almost any other animal. A great deal of whipping is not necessary; *some is.* If they know they will be corrected when orders are disobeyed, in a proper manner, it is sufficient, Kindness when sick, and at all times when they deserve, or will *permit it*, is a great thing. The hope of reward and fear of punishment, induce human action in master and servant. Never overtask your servant; feed and clothe him well, allow a reasonable time for sleep, and you will not be apt to injure him by work in the day. Never scold or threaten. W. W. Gilmer.

—*Southern Planter.*

Looking Glasses for Birds.—A correspondent of the "Gardner's Chronicle," says:

"The following plan is perfectly efficacious for scaring birds from fruit and other produce. One of my servants having by chance broken a looking glass, it occurred to me that the broken pieces suspended by a string, so as to turn freely in every direction, would give the appearance of something moving about, which would alarm the birds. I accordingly tried the plan, and found that no bird not even the most fool-hardy of them, dares come near. They had attacked my peas; on suspending a few pieces of the looking glass among them, the marauders left the place. The tomtits attacked my seckle pears, to which they seem very partial. A bit of looking glass suspended in front of the tree put a stop to the mischief. My grapes were then much damaged before they were ripe, by thrushes and starlings; a piece of looking glass drove these away and not a grape was touched afterwards. I had before tried many plans, but never found any so effectual as the above."

Editors' Table.

Acknowledgements, Answers, &c.

P. M. at *Goshen Hill*—Transfer made. M. F. B. owes 42 cents.

Maj. J. D. W., *Laurens C. H.*—New names entered and papers sent.

Hon. J. H. B., *Molino, Miss.*—Many thanks. Papers forwarded.

Broomsedge—Sorry you were too late for June. You appear in the present No. The very article needed on the subject.

W. J. Ball, *St. John's Berkley, S, C.*

S. Donaldson. *Donaldsville, S. C.*—Papers forwarded to A. L.

Palmetto Standard, *Chester C. H., S. C.*—Papers forwarded as directed. All subscriptions must commence with the first No. of the current volume.

P. M. *Chambers C. H., Ala.*—J. W. B., of Oselika, has taken volume 1, 2, and part of 3, of the Farmer and Planter, and has paid nothing.

J. R. S., *Abbeville Dist.*—Your first letter was received in due time, and the papers forwarded to "Leithe Farm School,' Bordeaux P. O., as directed We send another set. Perhaps the person who stole the first. may not need these—if so, you have received them before now.

G. W. R., *Gilchrist's Bridge, S. C.*—Transfer made, and papers sent as requested.

J. J. D., *Dyson's Mills, S. C.*—Your papers forwarded as directed.

E. R., *St. Thomas, S. C.*—Our thanks for your interesting observations on the probable limits of the cotton cultivation, which will be found in this number of our paper. Welcome to a place in our pages. Shall be pleased to hear from you at all times.

P. M., *Abbeville C. H., S. C.*—Papers, including back numbers, sent as directed to the Revd. H. F. P.

P. M., *Mt. Tabor, S. C.*—Wrote you enclosing T. B.'s account.

P. M., *Canton, Miss.*—D. R. M'A. owes us for one-third of present volume (33⅓ cents).

P. M., *Monticello, S. C.*—Many thanks for your respectable list of new subscribers. The papers have been sent to all as directed, and a receipt forwarded to you, which was unnecessary with this notice. See remarks on this subject in our last (June) number, page 95.

Col. T. P. B., *Pliney, S. C.*—Our old neighbor and friend will permit us to "hope" with him, that "in future a disposition for political papers will not overshadow," what he is pleased to term, "your (our) highly useful periodical."

Hon J. L. Orr, will accept our thanks for a paper of "Alfalfa," or *Chilian Clover Seed.*

We have some of the Chillian Clover now growing, the seed of which were some time since sent us by the Commissioner of Patents. As this plant is said to flourish best in southern latitudes, we may hope it will prove a valuable acquisition to the South, where it is pretty generally, though erroneously. believed the common clovers cannot be profitably grown.

We have been invited by our neighbor Mr. Elam Sharpe, to see a beautiful lot (some three or four acres) of red clover and grass, principally timothy. Mr S. was cutting the hay at the time (2d June) we saw it, and although we have been growing clover in manured lots for several years past, we have never weighed the yield, therefore we cannot say what this lot would probably produce per acre. We will venture the assertion, however, that the product of this single cutting will be equal at least to what the same land would produce in corn culture. Although the spring has been dry and unfavorable, the clover, interspersed with timothy and herds grass, stood sufficiently thick, and from knee to half thigh high.

Our good neighbor Mrs. N., and her amiable niece, Miss S., honored us a few days since with their thanks for the pleasure they enjoyed in viewing our lots whilst passing by occasionally to the village. And our once much respected and excellent neighbor, Mr. N., now no more, whose loss to our community is seriously felt and greatly regretted by every good man, used to say that the clover lots looked so inviting, he felt an inclination to dismount from his horse, go in, lay down, and roll over on the clover, which seemed to be sufficiently dense to hold him up

from the ground. Another neighbor enquired of us last year, when the yield was unusually light, as it is this, from the dry weather, on seeing what we had cut and cocked up, if it was possible that all that clover grew on the lot. Let it not be said that clover cannot be raised in the south, till you give it a proper trial, and fail.

P. M., *Leesville, S. C.*—Papers forwarded as ordered.

J. Y. P., *New Market, S. C.*—Postage not paid.

John W. Forney, Clerk of the House of Representatives, U. S.—Your instructions shall be attended to.

W. G. DeSaussure, *Sec. So. Ca. Institute.*—Your circular, sent one of the editors, shall appear in the Farmer and Planter at the earliest possible date. The Pendleton Farmers' Society is not dead, as we believe is the case with the State Society, but only sleepeth. Are the officers of the S. C. Institute not aware that there is such an Agricultural paper published as the Farmer and Planter? We presume not, as they have not honored us with a request, even, to *serve* the Society, which we would most cheerfully have done, "without money and without price," if desired.

R. M. S., *Laurens C. H., S. C.*—Many thanks, brother S. Go on, you are, right—you have the right kind of material for an agricultural Society in good old Laurens—such a society as will be useful and lasting. We have written you on other matters.

P. M., *Raynoso, S. C.*—Transfer made as directed. Your letter was *post marked*, "Horeland's," hence the mistake.

J. C. P., *Oak Bowery, Ala.*—Will accept our thanks for his interesting letter, and practical communication for the Farmer and Planter, which will be found in our present number.—You are right in supposing it was your (and we will add *our*) friend Dr. C. who gave us your address. The Dr. also paid for the first volume sent you. Therefore the amount enclosed by you, is one dollar more than you are due us.—We have placed it to your credit subject to your order

We are pleased to hear that you have succeeded in getting up a respectable Agricultural society, and take pleasure in presenting it a volume of the Farmer and Planter, which is sent to your address. We will endeavor to send you some documents that may be both interesting and useful to your society in its future operations.—Nothing is better calculated to advance the agricultural interests and prosperity of your county, than the establishment of Agricultural Societies and debating clubs—provided it can be done with that public spirit and liberality that should constitute the basis of all associations intended for the public good. But if your members should happen to be men, not of the right stamp, selfish, illiberal and parsimonious—not disposed to patronize the journals of the country devoted to their interest, or to advance the interests of any but themselves (which we are proud to believe from a part of your letter, which we shall take the liberty to give, is not the case in your community) then you may as well give it up at once-for, as an old acquaintance of ours, now no more, used to say, it will prove a "failery"—Such materials, although they may by the mere enlightened, public spirited, and persevering individuals of a community be wrought into a society, is destined to certain and rapid decay.

The Black Oak Agricultural Society, of S. C., which you enquire about, is every way worthy of your imitation; and we feel quite certain if you will address its polite and gentlemanly Secretary, Dr. H. W. Ravenel, he will take pleasure in forwarding you the transactions of the Society, so far as they have been printed.

Below we take the liberty to quote a part of your letter, in order that we may ask the favor of our readers to give you through our columns the information you desire. We shall feel truly obliged to yourself or friends for any exertion you may be pleased to make in behalf of the Farmer and Planter.

On the subject of *Hilling Corn*, we refer you to an article in this number, taken from the *Herald & Free Press*. We are opposed to the practice of hilling corn, especially in its latter culture Our practice is to follow the first plowing with the hoes, to cut away the grass if any, or to cover it if very young, but not to pile up the soil around the plant in a conical form, as is done by some, as if their object was to turn off and prevent the rain from sinking to its roots—which are, at this early stage of its growth, principally under the hill. And for the reasons given by the writer of the article referred to, and the additional one of the partial exhaustion of the stalk by its throwing out an additional set of brace roots after each successive hilling, we do not hill in the after culture.

Killing of Beach, Sweet Gum, &c.—We have not found it difficult to kill the beach by belting, but the sweet and black gum, with some other varieties of swamp growth, are more tenacious of life. Our practice has been to pile large brush heaps around such, and after the brush has become dry, to do them like Brown did his wife—"scorch" them.

Can you give us an article on the breeding and management of cattle? We understand your cows are very superior for native breeds, giving as much as 20 quarts of rich milk daily. But to the extract:

"I shall try at our next meeting to introduce the Farmer and Planter to the members of our society. If it should be as favorably received by them as it has been by me, you may hear from us again. Many of us are subscribers to the Soil of the South, and I hope many, or some, at least, will take the Farmer and Planter. I was glad to see the piece in the May number on hilling crops, for it is certainly contrary to nature; for instance: take young corn while the stalk is just beginning to form—the bud at that period is even with the surface of the earth, and if it is hilled then, the dirt presses the blades together above the bud and must of necessity retard its growth.

I should be glad if you or some of your contributors would give us an article on hilling young corn; also tell me how and at what time to kill beach and sweet gum trees, with other swamp growth, for I have a fine chance of swamp land, and I have been clearing some of it, but get on very slowly. J. C. P.

W. N. M. *Beaufort, S. C.*—Who makes enquiry in our 5th No. about the management of Salt Marsh, and other swamp lands, is referred to an article on another page, which we have selected from the Southern Agriculturist. It was written some years since by a gentleman of Beaufort, over the signature of "X. Y.," and we dare say is none the worse for its age—at least it would seem to a man up here in the mountains, who does not profess to have any practical knowledge of the *modus operandi* in reclaiming salt marshes, to be both practical and efficient. Instead of bringing on "high ground earth," however, we should prefer mixing a part of the underlaying clay with the top soil in forming the beds. The editors very pertinent remarks on this article of "X. Y." we have not room for in this number, but will endeavor to give them in our next. A compost of salt marsh mud, after exposing it a winter to the action of frost, with lime or marl (of which you have an abundance), would prove to be a most valuable application to your light, sandy up-lands. And we have but little doubt that liberal applications of lime to this marsh land, will prevent the "blue rust," by counteracting the effects of too much iron in the soil.

C. P. S., *Yorkville, S. C.*—Papers sent to A. G. N., according to instructions.

O. W., *Winsboro', S. C.*—Papers sent as directed, to B. R., of Rossville. All subscriptions must commence with the volume—have sent accordingly Shall be pleased to receive the promised communication. No "trouble," but on the contrary a favor asked of every well wisher of our enterprise. Many thanks to you for your good will.

P. M., *White Hall, S. C.*—Enclosed, applied as directed.

P. M.—*Forsythe, Ga.*—Extra numbers sent as requested.

P. M., *Cedar Falls, S. C.*—All right.

P. M., *Spring Grove, S. C.*—Your request attended to.

C. H. M., *Clinton, S. C.*—All right.

W. H. C., *Natural Grove, S. C.*—Many thanks our good friend. Arrange the matter any way that may best suit you—it will be agreeable to us. Our papers for each month are sent out by the first of the month, and yet we find some of our subscribers do not receive them, even in our own State, until a month old; and not only so, but some *never* receive them. We send at least one-tenth of the whole number of our papers twice in order to supply the missing numbers. More than *one* screw loose somewhere, certain.

Notice and answers to communications received after the 10th of June, will not appear before the August number comes to hand, as the matter for the July No. is made up early in June.

The Newberry Agricultural Society.—We are sorry that the notice of the Annual meeting of this Society, in the Newberry Sentinel, came to hand too late for our July number, which is made up. And it will be too late to notice it in our August No., as the meeting takes place on Wednesday the 28th of July. A respectable list of premiums is offered, and from the names of committees, some valuable reports may be expected, which we hope to have the pleasure of laying before the readers of the F. & P.

CONTENTS OF THIS NUMBER.

AGENCY.

Mr. H. P. Doctor, of Tuskaloosa, Alabama, is our agent for procuring subscribers to the Farmer and Planter, in Alabama, and other States, in which he may travel. He is authorized to make collections and to give receipts for the same.

Postage.

Some of our subscribers think they are charged too much postage on the Farmer and Planter The postage on it for *one quarter* (three months) is as follows:

Under 50 miles	1¼ cents.
Over 50 and not over 300	2½ "
Over 300 and not over 1000	3½ "
Over 1000 and not over 2000	5 "
Over 2000 and not over 4000	6¼ "
Over 4000	7½ "

MASONIC NOTICE.

THE next Regular Communication of Pendleton Lodge, No. 34, A.·. F.·. M.·., will be held on Thursday evening, 1st of July. By order of the W.·. M.·.

W. H. D. Gaillard,
Secretary.